of the foot appeared, and the symptoms were much exaggerated when the foot was pendent. Some months after this "red neuralgia" began; a small ulcer appeared on the dorsal surface of the foot, became deeper and wider, and dry gangrene of the second toe, and later of the other toes, of the foot developed. Amputation through the thigh was performed. The patient recovered from the operation and was free from pain. The portions of the anterior tibial and the popliteal arteries examined were found diseased, and the intima was most affected. The lumen in some parts was occluded. The changes in the nerves were proportionally slight. The authors believe that much more importance is to be attributed to arterial disease than to nerve degeneration in erythromelalgia, and that a condition similar to that of erythromelalgia without pain is not infrequently found in chronic cardiac and vascular disease. They report two cases in demonstration of this fact, and in conclusion they say that erythromelagia occurs often as an independent symptom-group, although it is not an independent disease. In uncomplicated cases it is probably due to disease of the peripheral arteries. The obliterating endarteritis may be connected indirectly with central disease, but may be independent of such disturbance. In comparison with cardiac and vascular disease, erythromelalgia is probably more a disease of the arteries than of the nerves. SPILLER.

227. NORMAL AND PATHOLOGICAL HISTOLOGY OF THE NERVE CELL. W. F. Robertson (Brain, 22, 1899, p. 203, Summer.)

Attention is here directed to this very excellent critical résumé of the recent literature bearing on the histology of the nerve cell. As the paper in question is a critical digest it cannot be abstracted. Particular attention is paid by the author to the histology; the pathology is given in bibliography. With this paper and its bibliography; with the monograph of Ewing's on "Studies in Ganglion Cells," and the "Bibliographical Contribution" of Jelliffe, both of which latter are published in the Archives of Neurology and Psycho-pathology, the present-day student cannot plead ignorance of the great field of ganglion cell pathology. JELLIFFE.

228. UEBER VOM VIERHÜGEL, VON DER BRÜCKE UND VOM KLEINHIRN ABSTEIGENDE BAHNEN (Concerning Descending Tracts from the Corpora Quadrigemina, Pons and Cerebellum). M. Probst (Deutsche Zeitschrift für Nervenheilkunde, Vol. 15, Nos. 3 and 4, p. 192).

Probst's paper is so full of detail that an abstract can hardly do justice to it. He finds experimentally that v. Monakow's bundle arises in the nucleus ruber and not in the thalamus or corpora quadrigemina, and it contains also ascending fibers. The descending fibers of the bundle could be traced into the sacral cord. The tract within the cord forms part of the crossed pyramidal tract, and because of this the area of degeneration in the lateral column is greater from a lesion in the spinal cord than from one in the pyramids or higher up. The normal fibers found within the crossed pyramidal tract in advanced cases of amyotrophic lateral sclerosis belong to v. Monakow's bundle. The tract has probably motor function, and yet division of the tract in animals does not cause paralysis. v. Monakow's bundle also receives fibers from the arched fibers (Bogenfasern) of the tegmentum of the pons.

The corpora-quadrigemina-anterior-column tract (Vierhügel-Vorderstrangbahn) almost disappears in the lower cervical cord. It gives fibers like v. Monakow's bundle to the anterior horns of the cord, and is probably motor in function.

The cerebral root of the fifth nerve descends lower than the exit of the fifth nerve, and can be traced in frontal sections so long as the vago-glossopharyngeus root fibers can be seen in their exit from the medulla oblongata. The fibers of the cerebral root have relations with the vago-glossopharyngeus nucleus, and the root also contains some ascending fibers.

Probst describes a new bundle which arises in the tegmentum of the pons and descends in the lateral column of the opposite side of the cord. Numerous motor tracts are found in the anterior, as well as in the lateral columns. The direct pyramidal tract in the dog and cat is usually unimportant, but may occasionally be well developed. The anterior column contains the corpora-quadrigemina-anterior-column tract (Vierhügel-Vorderstrangbahn), the fibers of the posterior longitudinal bundle arising in the deep nucleus of the posterior commissure and fibers from the lateral tegmentum of the pons. The bundle from Deiters' nucleus to the ventral peripheral zone (Randzone) contains ascending and descending fibers. SPILLER.

CLINICAL NEUROLOGY.

229. ON THE RELATION OF THE NERVOUS SYSTEM TO DISEASE AND DISORDER OF THE VISCERA. Morison (Edinburgh Medical Journal, 1898, iv., 6, and 1899, v., 1, 2 and 3).

These, the Morison lectures for 1898, are practically the continuation of a course already reviewed in this journal, and are mainly devoted to giving the author's views as to what deductions should be drawn from anatomical facts, as well as from theoretical considerations. The subject is considered under the following heads: 1. Disorders of visceral innervation. 2. Disorders of visceral sensibility. 3. Disorders of visceral motion. The pathology of the visceral nerve ending is non-existent, or, at any rate, unknown, so the author proceeds to consider the finer nerve branches to the different viscera in their normal and pathological condition. As a type of an organ undergoing enormous changes in bulk he takes the uterus and studies its nerve supply is non-gravid and gravid conditions. By a comparison of sections through this organ, made at different periods, he finds that there is some increase in size of the nerves during pregnancy, though it is more apparent than real, as there is no increase in the number or size of the individual nerve fibers. There is, however, greater pliability and looseness in their texture. To account for the nerve supply to the hypertrophied uterine musculature, the author calls attention to the tortuosity of the uterine nerves, especially found in early pregnancy and post partum, the coiling being so marked as to suggest to him "the figurative parallel of paying out a coil of rope to an object, which is increasing its distance from a point of attachment." It is suggested that perhaps the onset of labor pains is due to the fact that the object has gotten to the end of its tether, and "the note is sounded for a return of the organ to more moderate dimensions."

In support of this idea the frequency of premature labor in hydramnios and twin pregnancy is adduced. He next passes to a consideration of the pathology of the ganglion cell and its connections, peripheral and central, but frankly states that the course of the visceral fibers in the central nervous system is too little known at present for us to be able to consider with any profit, lesions associated with "gen-